

General information	
Academic subject	Elements of Social Statistics and Demography
Degree course	
Academic Year	2022-23
European Credit Transfer and Accumulation System (ECTS):	8
Language	Italian
Academic calendar (starting and ending date)	September/December
Attendance	Attendance, while not compulsory, is highly recommended

Professor/ Lecturer	
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Telephone	
Department and address	DIRIUM
Virtual headquarters	Teams
Tutoring (time and day)	Thursday: 8,30-10,30 in attendance or on Teams

Syllabus	
Learning Objectives	<p>Students will be able to apply the knowledge and understanding acquired during teaching activities through the simulation of concrete situations and case studies. This will allow students to develop skills regarding the measurement, observation and processing of statistical and demographic data, and the application of useful concepts and methods to design and carry statistical surveys capable of producing information on social phenomena and social behaviours. These objectives will be pursued by accompanying lectures and exercises with reports and oral presentations carried out individually and/or in groups during lessons.</p> <p>Students will be guided to develop skills to build critical evaluations, by applying the theoretical knowledge acquired, on information provided during the course regarding methods, data elaborations, and interpretations. This will allow students to acquire the ability to collect and analyze data, to make autonomous judgments and coherent reflections on topics addressed during lessons, with special regard to the observation and management of relevant populations -from a statistical-demographic perspective- and to the decision-making-processes of public and private interest.</p>
Course prerequisites	Basic knowledge (at high school level) of arithmetic, algebra, and geometry.
Contents	<p>Course program</p> <ol style="list-style-type: none"> 1. Data collection and classification. Survey design. Sample surveys. Data collection. Intensity, categories, and frequencies. Various types of variables. 2. Statistical observation. Quantitative and qualitative variables. Time series and territorial series. Two way and multiple variables. 3. Graphical representations of data. Purpose of graphical representations. Cartesian diagrams. Orthograms and histograms. The area method. The polar diagram. The cartograms.

	<ol style="list-style-type: none"> 4. Mean values (mode, median, quantiles, arithmetic, harmonic, geometric, quadratic mean). Mean Properties. 5. Variability measures (range, interquartile range, deviance, variance, standard deviation, coefficient of variability, Gini's ratio). 6. Normal distribution. The standard normal curve. Asymmetry. Abnormality. 7. Regression and correlation. Dependent, independent, and interdependent characters. Regression lines. Linear correlation coefficient. Regression variance. Quadratic connection index. 8. What is demography for? The current emerging demography. 9. Individuals, generations, population. Definition of population. Individuals and their biographies. Time and duration. The Lexis Diagram. Stories of generations and state of the population. Generations and contemporaries. 10. Size and structure of a population. Age and sex composition of populations. A social challenge: demographic ageing. Data sources. 11. The processes of renewal and extinction of generations. The formation of generations. Intensity, timing and composition of the offspring. Mortality and average life length. Population longevity and individual endurance. Reproduction measures and replacement fertility. Contemporaries and generations. 12. The demographic situation and the long-term projections. Stock and population changes. The demographic balance sheet and its components. Population growth and measures. The demographic transition. Forecasts. 13. The family and its transformations. The family as a system of relationships. Long-term transformations. Family structures in western societies today. The family in ISTAT surveys. 14. Beyond demography: from description to interpretation. Knowledge of demographic phenomena. Mortality determinants. Fertility determinants. Migration determinants.
Books and bibliography	G. GIRONE, C. CROSETTA A. MASSARI, Statistica, Cacucci Editore, Bari, 2020)
Additional materials	For the exercises: Notes provided by the professor.

Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
Hours			
192	64	4	124
ECTS			
8			
Teaching strategy		Lectures in presence	
Expected learning outcomes			

Knowledge and understanding on:	As part of the expected learning outcomes, students will acquire knowledge and understanding about both the theory and practice of statistical and demographic methodologies. In particular, the course aims to train students to develop the skills necessary for the collection of quantitative and qualitative information, for data processing, for the selection and application of statistical and demographic methods, and for the representation and interpretation of collective phenomena in different contexts, including socio-demographic and economic ones. In addition, students will acquire skills regarding both the comparative analysis of variables appertaining to the same or different statistical populations, and the analysis of the characteristics of populations and demographic processes. The educational objectives of this course will be pursued through lectures and exercises carried out during lessons, as well as through seminars on topics of specific interest.
Applying knowledge and understanding on:	Students will be able to apply the knowledge and understanding acquired during teaching activities through the simulation of concrete situations and case studies. This will allow students to develop skills regarding the measurement, observation and processing of statistical and demographic data, and the application of useful concepts and methods to design and carry statistical surveys capable of producing information on social phenomena and social behaviours. These objectives will be pursued by accompanying lectures and exercises with reports and oral presentations carried out individually and/or in groups during lessons.
Soft skills	Considering that topics taught follow a subsequent structure, during lessons and exercises, students will be repeatedly urged to verify their knowledge, and called to fill cognitive gaps and expand the skills already acquired. This will allow students to improve their learning skills, through individual and/or group activities, and their method of study by using a theoretical-practical learning approach, that is, the process of learning by doing. The learning capacity will be evaluated through several forms of continuous evaluation during the course, also carrying out some data elaborations and research-related analysis.

Assessment and feedback	
Methods of assessment	Written test and oral interview
Evaluation criteria	<p>Problem-solving skills: i.e. applying what has been learnt to a real situation, identifying the areas of knowledge that allow it to be tackled most effectively. Attending students will apply statistical methodologies to the study of social phenomena and provide a critical interpretation of the results obtained through statistical survey.</p> <p>Analysing and synthesising information: i.e. acquiring, organising and reformulating data and knowledge from different sources. Exercises based on official statistics will be carried out, which will help to develop the ability to analyse and compare statistical data.</p> <p>Making independent judgments: i.e. interpreting information critically and making decisions accordingly. Students will have to indicate how to choose between alternative statistical methods for the collection, representation, processing and synthesis of statistical data.</p> <p>Efficient communication: i.e. conveying information and ideas in both oral and written form in a clear and formally correct manner, expressing them in terms appropriate to the interlocutors, specialists or non-specialists in the field. Students expound on statistical methods used in the collection, processing and interpretation of data concerning social phenomena and indicate measures of growth and structural characteristics of populations.</p>

	<p>Continuous learning: i.e. knowing how to recognise one's own shortcomings and how to identify effective strategies for acquiring new knowledge and skills. During the course of the exercises, students will be asked to point out the statistical tools (indices, ratios, graphs, tables) that enable them to critically analyse the data.</p> <p>Working in a team: i.e. coordinating with other people, even those with different cultures and professional specialisations, integrating skills. Attending students will be asked to form working groups during the exercises.</p> <p>Being enterprising: i.e. being able to develop innovative ideas, to plan and organise their implementation, to manage the necessary means and to be willing to take risks in order to do so. Students are expected to identify appropriate statistical techniques for data processing and synthesis.</p> <p>Ability to organise and plan: i.e. to realise ideas and projects taking into account time and other available resources. Attending students are expected to carry out exercises and case application activities within the time allocated for the course.</p>
<p>Criteria for assessment and attribution of the final mark</p>	<p>Evaluation is by means of an oral final examination with a grade expressed in thirtieths.</p>
<p>Additional information</p>	